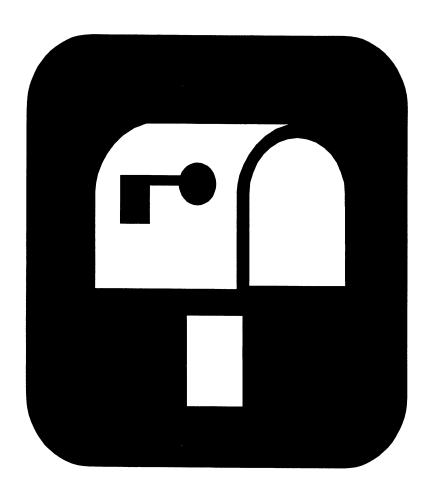
MONTANA GUIDE TO MAILBOX SAFETY AND PLACEMENT



2004





INTRODUCTION

For many years little attention was paid to mailbox structures and the hazard they presented to motorists. Many "ingenious" devices have been used to support mailboxes, such as tractor wheels, plowshares, milk cans filled with concrete, welded steel chains, and massive brick structures. In recent years, efforts have been directed toward the development of vandal-proof boxes and, in some cases, heavy, thick, steel-plated boxes have been used. All of these designs can be formidable hazards. Especially hazardous are multiple mailboxes supported by a horizontal beam. Test has shown that upon impact the beam can easily break through the windshield and impale an occupant in its path. Unfortunately, many deaths and injuries have resulted from accidents with hazardous mailboxes.

Initial efforts to address these little known hazards began in the late 1970's at the Texas Transportation Institute (TTI) through the support of the Texas Department of Transportation (TxDOT) and the Federal Highway Administration (FHWA). ... As a result of these efforts and the support of the U.S. Postal Service and other State DOTs, including Minnesota, Nebraska and Montana, notable improvements in mailbox safety have been realized. National guidelines have been issued by the American Association of State highway and Transportation Officials (AASHTO) and the FHWA identifying safe designs and describing impact performance standards for mailboxes. Safe and cost-effective supports and attachment hardware for a single installations are placed as far from the travel way as possible to minimize the probability of impact and to afford mail carriers room to exit the travel way so as not to impede traffic. Use of heavy boxes is also strongly discouraged since their hazard potential has been clearly demonstrated.

Edited comments of Hayes E. Ross, Jr., P.E., Ph.D., Professor. Civil Engineering Department Head, Structural Systems Division, TTI Texas A&M University College Station, TX 77843

ACKNOWLEDGEMENTS

Mailbox safety in Montana is a multi-agency team effort. The Continental Divide Rural work team (QWL/EI) has been the driving force to increase public awareness about hazardous mailboxes. This team includes rural mail carriers, postmasters, the FHWA safety engineer and representatives from the Montana Department of Transportation and the Montana Association of Counties. All of these team members deserve thanks for their efforts in getting a law passed, developing a brochure, producing videotapes and holding a "Most Hazardous Mailbox" contest. We sincerely appreciate their support.

We especially want to thank the rural carriers and State and County road maintenance personnel who deal directly with mailbox owners during implementation. Many mailbox owners take pride in having a unique mailbox that is virtually indestructible to thwart vandalism, and they are generally not aware of the hazard presented by *their* mailbox. It is difficult to confront the people we serve, but most mailbox owners will cooperate when they are made aware of the problem. It is even more difficult to inform a mailbox owner that someone was killed or injured during a collision with the owner's mailbox.

NOTE TO CITY/COUNTY PLANNING BOARDS

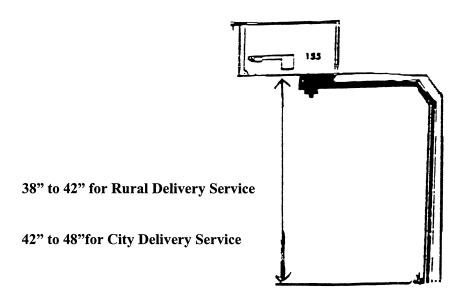
Box placement location shall be included in the planning and design process. All subdivisions shall include adequate area to insure safe egress for delivery personnel and customers to be located off main thoroughfares.

This process shall include contacting the local Postmaster before building permits are issued for new construction, for new subdivisions, (and all other new addresses, including single unit addresses), for input on box placement, addressing information, and line of travel considerations.

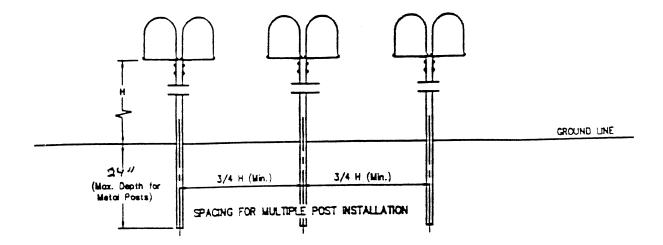
STANDARD GUIDELINES FOR PLACEMENT OF MAILBOXES

MAILBOX HEIGHT: A height of 38-42 inches for Rural Delivery Boxes and a height of 42-48 inches for City Delivery Boxes is desirable. This height is from the bottom of the box to the surface of the roadway. It allows the carrier to see inside the mailbox to determine if mail has cancelled or uncancelled stamps on it.

PLACEMENT OF BOXES ON INDIVIDUAL POSTS: Mailboxes should be placed at the end of and on the far side of the driveway in a position so that the carrier can use the driveway as a turnout to serve the box. This also accommodates the carrier when it is necessary to deliver parcels to the door. I.e. Parcel can be left in a designated place when no one is home and mail can be placed in the mailbox as the carrier exits the driveway.



THE FRONT OF THE BOX SHOULD BE EVEN WITH THE CURB CONTACT YOUR LOCAL POSTMASTER FOR MODE OF DELIVERY SERVICE!



PLACEMENT OF BOXES ON ROADWAYS

On roadways where the speed limit is greater than 35 M.P.H. attempt to place the box/boxes in turnouts where available so carrier is safely out of the flow of traffic. Ensure there is a clear line of sight so carrier can judge when it is safe to merge into traffic lane. If no turnout is available place boxes on a side road a minimum of 50 feet from the intersection with the heavier traveled road. Place boxes in accordance with postal guidelines. This should provide a safe zone in which the carrier/customer may have access to the boxes. In inclement weather and/or snowy/icy road conditions, cars may be less likely to slide/skid into the boxes. Refer to Turnouts pp. 10, 11, and 12.

NEW CONSTRUCTION IN SUB-DIVISIONS

Determine the size and total residences/businesses. If it is going to be a phased project attempt to place boxes so that the construction process and delivery would have a minimum of interference with each other.

If NDCBU's are selected to be used, place so carrier may park behind boxes for back loading and leave front available for customer access. If front loading units are used then place so carrier can load them safely reenter the flow of traffic.

EACH SUBDIVISION IS UNIQUE AND SHOULD BE DEALT WITH INDIVIDUALLY!

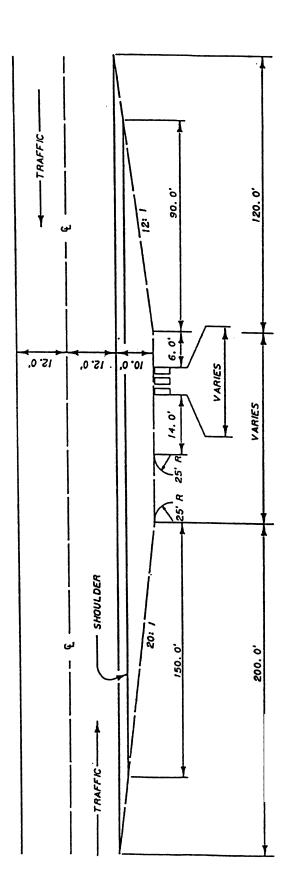
GET ORGANIZED! WHERE DOES ONE BEGIN? WHO DO I CONTACT?

Mail service is an integral part of any community and must be given proper consideration during the planning stages. In the past, owners, builders, and developers have assumed that postal services would be provided as a matter of course. However, advance planning for postal services is as important as the planning for any other service. Postal managers must anticipate the service needs of new communities, new housing developments, and older communities, which do not have delivery service, and plan delivery systems with community growth in mind.

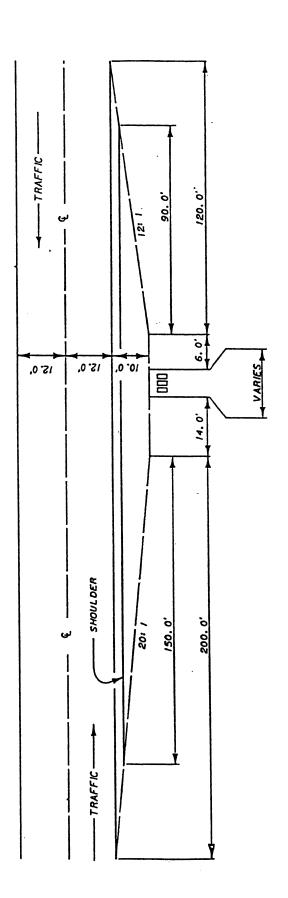
DETAIL

MAILBOX TURNOUT WITH APPROACH

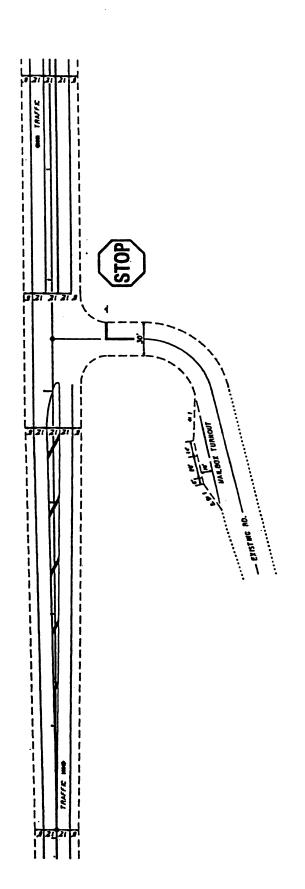
NO SCALE



MAIL BOX TURNOUT WITHOUT APPROACH



DETAIL
MAILBOX TURNOUT
NO SCALE



Obviously, when we come into the picture late, decisions have been made that may have to be changed; or worse, we cannot select and locate equipment that will function to everyone's advantage.

This is especially true in office buildings where available space is restricted to begin with, and an architect is reluctant to have to alter the building plans. Space requirements should be discussed in the initial planning phase.

Residential developers need to know where delivery paints will be located so locations can be included in the landscape plans. Site locations in single family home developments must be selected early, and such information made available to the developer so his sales people can inform prospective home buyers just where the mail receptacles will be located.

A GUIDE FOR ERECTING A SAFE MAILBOX

The Law:

On October 1, 1991, Montana law on Highway encroachments (60-6-101, MCA) became effective which regulates the placement of mailboxes and newspaper delivery boxes. This law defines mailboxes and newspaper delivery boxes on public-owned rights-of-way as encroachments subject to removal. The law applies to roadways that are under the jurisdiction of the Montana Transportation Commission. However, many counties have passed a resolution to require safe installations on county roads.

The Risk:

Why should we be concerned about mailboxes? Public road agencies spend a lot of public money to make roadways safe by removing or shielding hazardous fixed objects. An unsafe mailbox installation diminishes this effort to make roadsides safer. The owners of the road (taxpayers) risk a liability problem by not removing hazardous mailboxes. In addition, the owner of the mailbox can be sued for damages resulting from a collision with a mailbox.

The Cost:

Crash records of the Montana Transportation Information System for the four years (1996 through 1999) show there were 422 crashes in which the first harmful event or the most harmful event was a mailbox. Among these 422 crashes there were three fatalities and 136 persons injured. The economic loss in Montana based on these crashes alone exceeds on million dollars.

The Solution:

These fatalities and injuries largely are preventable if we (the public) insist that only safe mailbox installations be allowed on public-owned rights-of-way. A mailbox installation that appears to be hazardous should be reported to the local Postmaster. The Postmaster then will contact the Department of Transportation or county road supervisor and work jointly with the appropriate official to have the mailbox removed and replaced with an approved design. The cost is borne by the owner of the mailbox.

Several manufacturers offer tested and approved mailbox support systems that can be ordered, ready to install. In addition, drawings and materials lists are included in this pamphlet for building your own mailbox support from common hardware items.

The Details:

A mailbox support system must pass three basic evaluation criteria in order to be approved.

- 1. The support must be forgiving and yield on impact. The post should either bend and lay down or break away when struck, without causing the vehicle to roll over.
- 2. The mailbox should have a secure mounting bracket to keep the mailbox and post fastened together.
- 3. The mailbox and its support should not penetrate the windshield of a vehicle, nor should any components fly into the roadway and create a hazard for other motorists. This means that the weight of the mailbox and the support must be light, yet strong enough to resist separating during impact. If a metal support is designed to break away at the ground line, a retainer strap or cable should fasten the base and post together to prevent the post and mailbox from flying up and through the windshield.

Some Cautions:

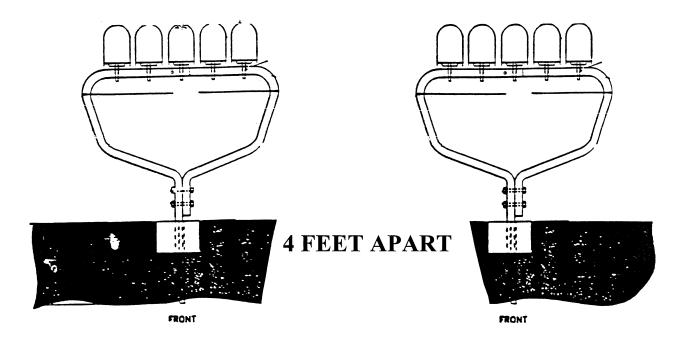
Mailboxes as well as some supports are listed in catalogs and displayed on store shelves and marked approved by the Postmaster General. However, some of these products may not be acceptable for installation in any area that has no curb and gutter. That is because the mailboxes are excessively heavy and they have not been crash tested successfully with an approved support system. (The approval of mailboxes is given by the Postmaster General. Support systems are approved by the Federal Highway Administration in the U.S. Department of Transportation).

Security:

- 1. Wherever possible, locate equipment near streetlights or other night-lights to ensure maximum visibility after dark.
- 2. Avoid locating units in secluded, darkened, and enclosed areas out of public view, which could provide cover for vandalism.
- 3. Avoid placing them near growing shrubbery, trees or other plants that may eventually obscure their visibility.

Turnouts and multiple Mailboxes:

It is desirable to have a rural mailbox installed in a turnout. A turnout provides a refuge from traffic for the mail carrier as well as the homeowner. In addition, by placing a mailbox farther from the traveled way, there is less chance it will be hit by an errant vehicle, wide load, snowplow or vandals. Multiple support mailbox support systems need to be separated by 4 feet as seen by the illustration.



If several property owners are served by a county road that intersects a major highway, it is best to locate the mailboxes in a turnout off of the county road. This reduces the exposure (risk) for the owners, the carrier and the traveling public. Some local road maintenance personnel will assist mailbox owners in building a turnout in any case; you need to obtain permission and guidance from the road authority before building a turnout.

Newspaper Tubes:

It is permissible to mount a newspaper delivery tubes on the same support used for a mailbox as long as it does not interfere with opening the mailbox door, or obscure the address legend or flag on the mailbox. Generally, if newspaper tubes are mounted below a mailbox, the tube should be recessed at least one-half inch back from the face of the mailbox so it doesn't interfere with opening the mailbox door. Newspaper tubes must not be attached to, or supported directly by the mailbox.

Commercially Available supports:

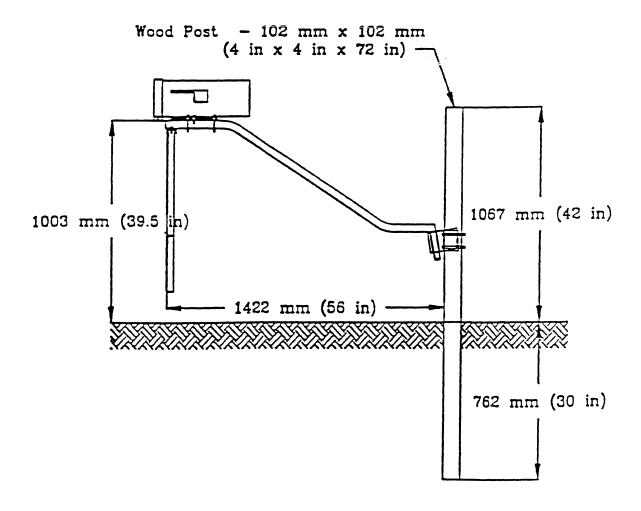
The following mailbox support systems have been tested successfully in crashes:

Roadside Safety Devices Swing-Away Mailbox Support. This is a cantilevered design that impacts the bumper of a vehicle and swings out of the way, then returns by gravity to the original position. It is excellent in snow country, as heavy wet snow thrown be a plow will not knock it down but instead just swigs away. In addition, it is easy to mow under and around it given the cantilevered design. The installation was crash tested successfully with two standard mailboxes. Installation is easy and an adjustment for the cantilever is provided in case you don't get the base installed perfectly plumb (see attached information).

<u>Friend Innovations.</u> The Friend Town and Country Mailbox Support is a cantilevered design that is easy to install. It is approved for a single mailbox weighing 10 pounds or less. Impacting the mailbox will break the windshield of a vehicle, however, the cantilevered arm will

Roadside Safety Devices Box 156 Gilford, MT 59525

Laurence Green (406)376-3195



1 ft = 0.305 m 1 in = 25.4 mm

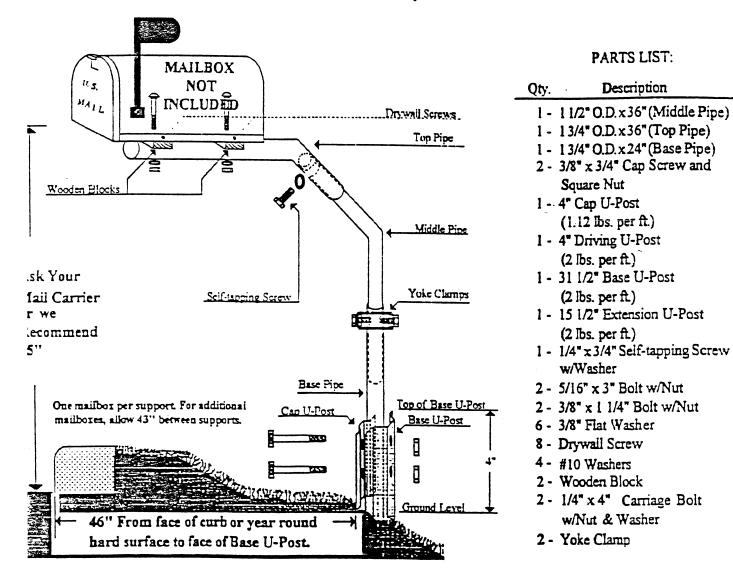
Figure 1. Schematic of Roadside Safety Devices Swing-Away Mailbox Support Design.

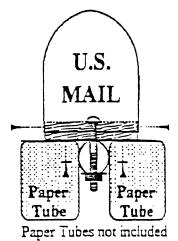
FRIEND INNOVATIONS

P.O. BOX 434, GRAND RAPIDS, MN 55744; (218) 326-4188

We are pleased to have this opportunity to offer you our Model 948 Mailbox Support.

Our apologies! In making a better product for you, the picture on the box is somewhat obsolete, please refer to enclosed instructions.





PREFERRED BY MAIL CARRIERS. SNOW PLOW FRIENDLY

No hole to dig, No concrete to mix.

Assemble in 30-40 minutes.

Can be installed in partially frozen ground.

Readily adjustable in height.

Able to swing up (gravity brings it back).

Center locking design.

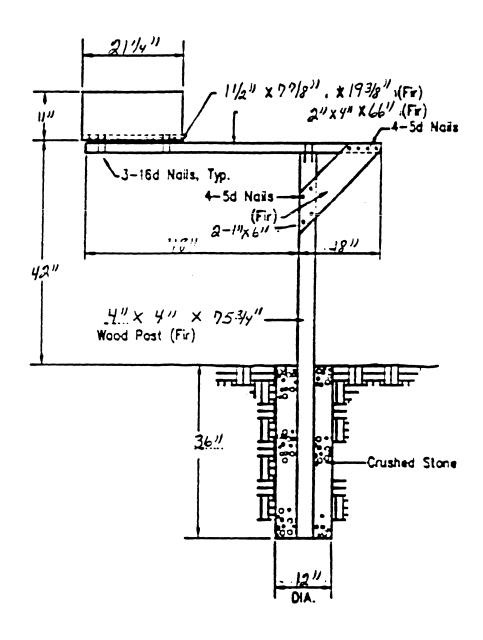
Attach up to 2 paper tubes.

Break away base.

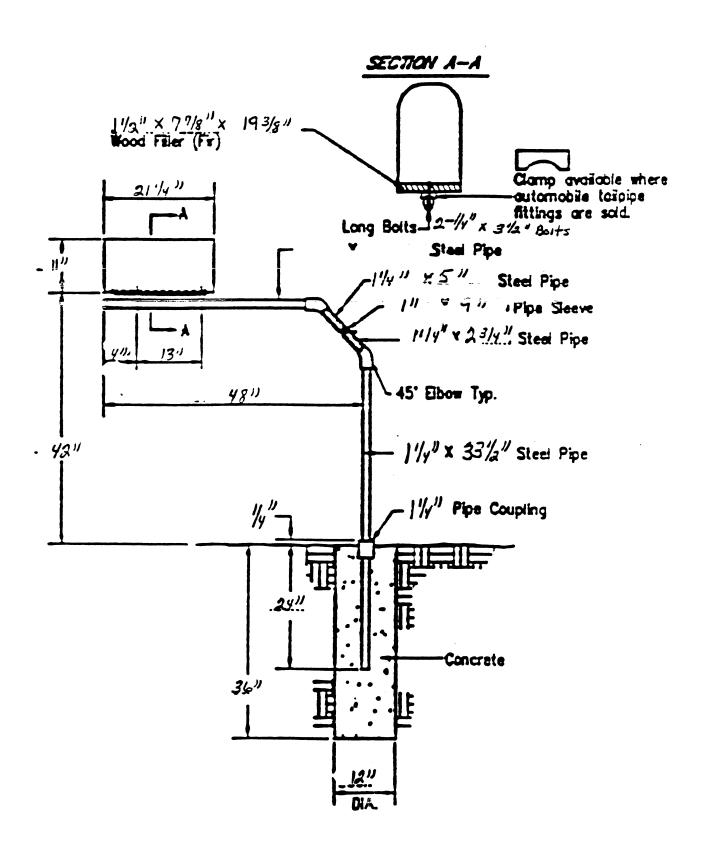
Crash tested

Rust resistant.

A simple idea, Light but durable, Beautiful but functional.



DO IT YOURSELF CRASH TESTED WOODEN MAILBOX SUPPORT



DO IT YOURSELF CRASH TESTED METAL MAILBOX SUPPORT

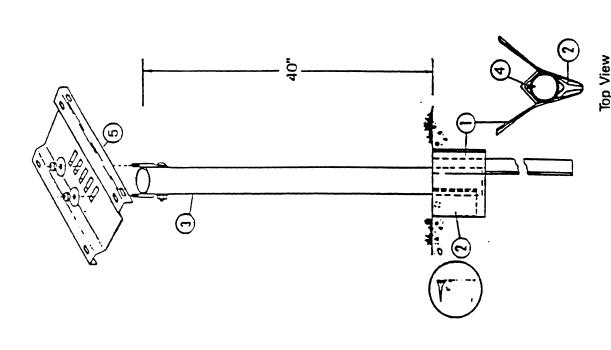
hit the "A" pillar of the vehicle preventing intrusion into the occupant compartment providing the weight of the mailbox in not excessive. This design is also excellent for snow country, as it will swing out of the way if impacted by heavy wet snow. The base must be installed fairly plumb. All hardware except the mailbox and newspaper tube is supplied (see attached information).

Foresight Products, Inc. This mailbox support system uses an angled iron base with a "V-lock" socket to attach a thin-walled tube support system. The single vertical post mount is suitable for one or two mailboxes and the kit includes the necessary mounting bracket to attach the mailbox to the post. The multiple mailbox support systems will accommodate up to five small mailboxes. The system is easy to install. If the ground is hard or your have several installations to make, however, it is advisable to obtain a driving cap or spud from the company to protect the end while driving in the base. These mailboxes have been knocked down by plowing heavy wet snow. For this reason, it is advisable to place the installation in a turnout (see attached information).

Do It Yourself Supports:

Several crash-worthy designs are available that can be built from common hardware items. Drawings and material lists are attached.

Minnesota Cantilever Design (Wood Post, Wood Arm). This is the only all-wood design that has been tested successfully in crashes. The vertical support is a 4-inch by 4-inch by 66-inch board mounted on top of the post with 48 inches cantilevered from the face of the post, and 14.5 inches overhanging the back of the post to accommodate the two diagonal braces. Test show that an impact to the mailbox and cantilevered arm will break the windshield, but the cantilevered arm will contact the vehicles "A" pillar preventing intrusion into the occupant compartment. However, the weight of the mailbox must be 10 pounds or less. For this reason, the installation is suitable for only a single mailbox. An impact to the vertical post produces an eccentric load or moment that rotates the cantilevered mailbox mostly out of harm's way.



V-LOC SOCKET:

Stabilizer Fin is 12 gauge hot rolled carbon sheet steel, commercial quality. The fin is formed from sheet steel

to the shown configuration.

Leg Angle is hot rolled commercial quality.

Finish is dip-coated with rust inhibiting primer. Fed. Spec.

Dimensions TTP636.

Dirt Model 10" × 15"

Concrete Model 8"×91/4"

2½"x2½"x¼"x8" $(4) 1\%" \times 1\%"$

21/2"x21/2"x30" $(6) 1\%" \times \%"$

V-LOC WEDGE:

Welds

Angle

The V-LOC wedge is 12 ga. galvanized steel tubing made to ASTM A-513 specifications, then press formed into wedge

SUPPORT: 9

shape.

A-513, 2.0" O.D. 14 ga. Galvanized per ASTM A-525, G-90 or The post is welded mechanical tubing produced to ASTM equivalent. The post is cut to 48", drilled.

4) SUPPORT HARDWARE:

1 each - #14 x ¾" tec screw (for alignment stabilization)

(5) BRACKET KIT: One Kit Accommodates One (1) Mailbox

2 each - Bracket halves, galavanized 16 gauge sheet steel.

2 each - 5/16" zinc plated spade bolt. 1 each - 5/16" x 21/3" zinc plated hex head machine bolt.

3 each - 5/16" nylon insert zinc plated hex head lock nut.

2 each - 5/16" zinc plated flat washers.

4 each - #10 x 34" zinc plated round head machine screw.

8 each - #10 zinc plated flat washers.

4 each - #10 zinc plated hex head lock nut.

MAILBOX NOT INCLUDED

Specifications subject to change without notice. Covered by one or more of the following U.S. Patents No. 4,021,977 - 4,320,506 - 4,266,747

Other Patents Pending



6430 East 49th Drive COMMERCE CITY, COLORADO 80022 (303) 286-8955 (800) 325-5360

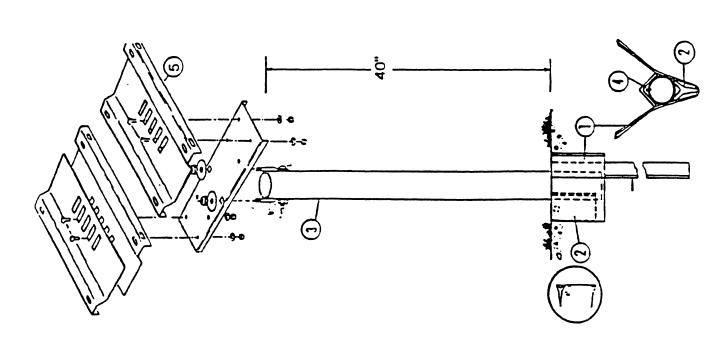
FORESIGHT PRODUCTS INC.

MODEL No. 20-S

Results wailable on Request

FHWA CHASH TESTED and ACCOUNTED. Test

SPECIFICATIONS
Revised 11, '86



FHWA CRASH TESTED and ACCEPTED. Test Results Available on Request

Top View

MODEL 20-D DOUBLE MAILBOX SUPPORT SYSTEM — Accommodates Two (2) Mailboxes

(1) V-LOC SOCKET:

Stabilizer Fin is 12 gauge hot rolled carbon sheet steel, commercial quality. The fin is formed from sheet steel to the shown configuration.

Leg Angle is hot rolled commercial quality.

Finish is dip-coated with rust inhibiting primer. Fed. Spec. TTP636.

Dimensions Fin

Dirt Model 10" x 15"

Concrete Model 8".x 9¼" 0" 2½".2½",×½"

2%"x2%"x%"x30" (6) 1%" x %"

2½"x2½"x8" (4) 1½" x ½"

) V-LOC WEDGE:

Welds

Angle

The V-LOC wedge is 12 ga. galvanized steel tubing made to ASTM A-513 specifications, then press formed into wedge shape.

(3) SUPPORT:

The post is welded mechanical tubing produced to ASTM A-513, 2.0" O.D. 14 ga. Galvanized per ASTM A-525, G-90 or equiva ent. The post is cut to 48", drilled.

(4) SUPPORT HARDWARE:

1 each - #14 x ¾" tec screw (for alignment stabilization)

(5) BRACKET KIT: One Kit Accommodates Two (2) Mailboxes.

4 each - Bracket halves, galvanized 16 gauge sheet steel. 1 each - Channel bracket, galvanized 14 gauge sheet steel

2 each - 5/16" x 21/2" zinc plated spade bolt

l each - 5/16" x 2%" zinc plated hex head machine bolt

leach - 5/16" x 21/2" zinc plated truss head machine screw each - 5/16" nylon insert zinc plated hex head lock nut

each - 5/10 inyou insert this plated liet insert each - 5/16" zinc plated flat washer

each - #10 x 3/" zinc plated round head machine screw

16 each - #10 zinc plated flat washers 8 each - #10 zinc plated hex head lock nut MAILBOXES NOT INCLUDED

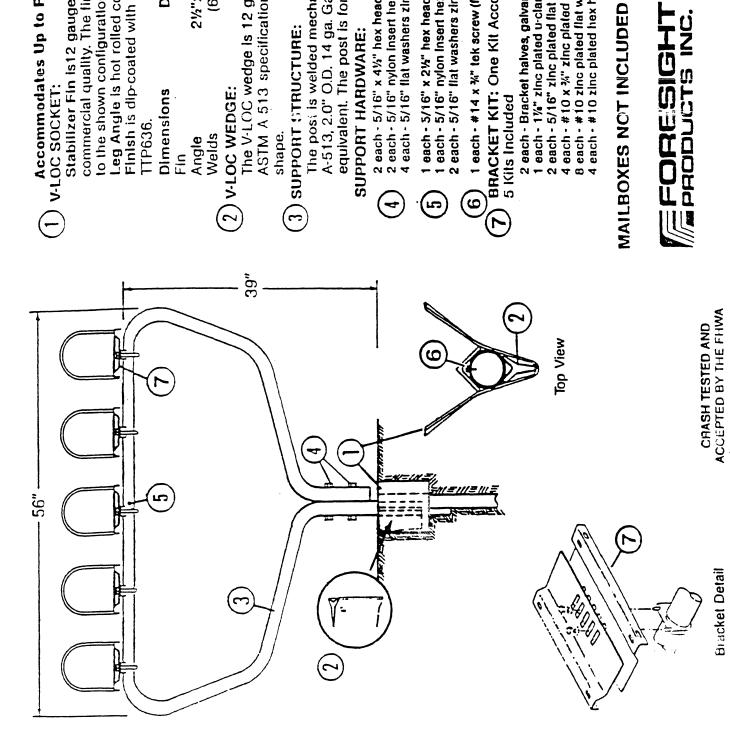
Specifications subject to change without notice.
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No. 4.021,977 - 4,320,606 - 4,286,747
Other Palents Pending



6430 East 49th Drive COMMERCE CITY, COLORADO 80022 (303) 286-8955 (800) 325-5360

MODEL No. 20-D

SPECIFICATIONS
Revised 11/ /86



Accommodates Up to Five (5) Mailboxes

1) V-LOC SOCKET:

Stabilizer Fin is12 gauge hot rolled carbon sheet steel, commercial quality. The lin is formed from sheet steel to the shown configuration.

Leg Angle is hot rolled commercial quality.

Finish is dip-coated with rust inhibiting primer. Fed. Spec.

TTP636.

Dirt Model Dimensions

10" x 15"

21/2"x21/2"x1/4"x8" $(4) 11/2" \times 1/4"$ 8" × 91/4"

Concréte Model

 $(6) 1 \% \times \%$

2) v-Loc wedge:

Welds

Angle FI

The V-LOC wedge is 12 ga. galvanized steel tubing made to ASTM A 513 specifications, then press formed into wedge

3) SUPPORT STRUCTURE:

shape.

A-513, 2.0" O.D. 14 ga. Galvanized per ASTM A-525, G-90 or equivalent. The post is formed, punched and pre-assembled. The posi is welded mechanical tubing produced to ASTM

SUPPORT HARDWARE:

- 2 each 5/16" x 41/3" hex head bolts zinc plated 7
- 2 each 5/16" nylon insert hex lock nuts zinc plated. 4 each 5/16" flat washers zinc plated.
- each 5/16" nylon Insert hex lock nuts zinc plated 1 each - 5/16" x 21/8" hex head bolls zinc plated. 2 each - 5/16" flat washers zinc plated.
- 1 each #14 x 1/4 tek screw (for alignment stablization). ်
- BRACKET KIT: One Kit Accommodates One (1) Mailbox -5 Kits Included

2 each - Bracket halves, galvanized 16 gauge sheet steel

each - 1%" zinc plated u-clamp.

2 each - 5/16" zinc plated flat washers.

4 each - #10 x ¾" zinc plated round head machine screw

8 each - #10 zinc plated flat washers.

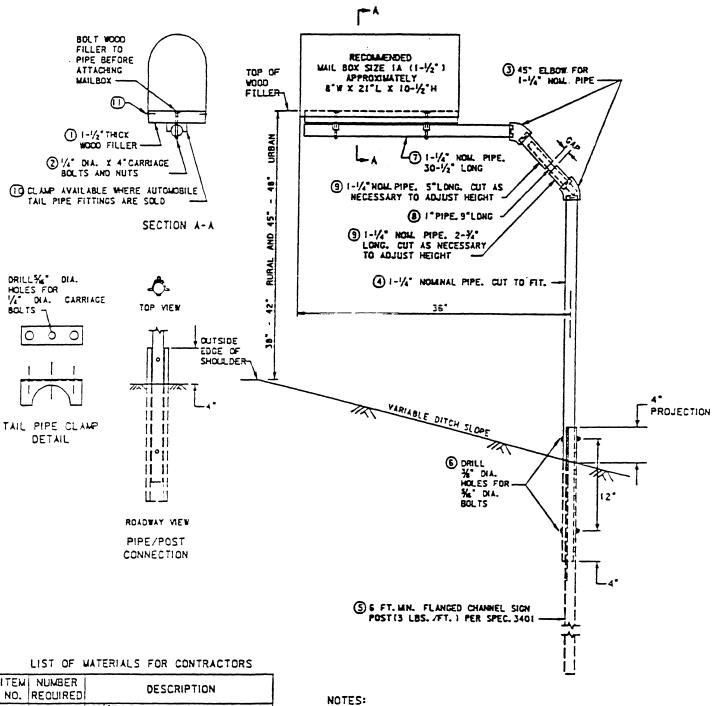
4 each - #10 zinc plated hex head lock nut.

6430 East 49th Drive COMMERCE CITY, COLORADO 80022 (303) 286-8955 (800) 325-5360 Specifications subject to change without notice.
Covered by one or more of the following U.S. Patents:
No. 4,021,977 - 4,120,506
Other Patents Pending

FORESIGHT

MODEL No. 20-M

SPECIFICATIONS
Revised 117 /86



•	NUMBER	DESCRIPTION	
NO.	REQUIRED		
1	1	1-1/2" THICK WOOD FILLER	
		CUT TO FIT SNUG UNDER MAIL BOX	
2	2	'/4' DIA. X 4' LONG	
		CARRIAGE BOLTS & NUTS	
3	2	45" ELBOW FOR 1-1/4" NOMINAL PIPE	
4	1	1-1/4" NOMINAL PIPE. CUT TO FIT	
5	l	6 FT. MIN. SIGN POST (3 LBS. /FT.)	
5	Z	% DIA. BOLT. MUT & LOCKWASHER	
7	1	1-1/4" NOMINAL PIPE. 30-1/2" LONG	
8	ı	I' PIPE. 9' LONG	
9	1	1-1/4" NOMINAL PIPE. 5" LONG	
	1	1-1/4" NOMINAL PIPE. 2-1/4" LONG	
10	Z	1-1/2" TAIL PIPE CLAMP	
11	9	NOL 10 X 1" SHEET WETAL SCREWS	

ALL PIPE AND PIPE FITTINGS SHALL CONFORM TO SPEC. 3362

ALL FASTENERS SHALL CONFORM TO SPEC. 3391

ALL MATERIALS SHALL BE GALVANIZED PER SPEC. 3392

MAIL BOX LOCATIONS SHOULD BE STAKED BEFORE INSTALLATION FOR PROPER HEIGHT AND DISTANCE FROM THE ROADWAY. ONCE STAKED THE INSTALLER MUST NOTIFY THE ENGINEER AND THE TOST CONTICE. THE ENGINEER AND POSTMASTER/MAILCARRIER MILL BE ALLOWED 48 HOURS TO REVIEW AND MODIFY THE STAKED LOCATIONS PRIOR TO FINAL INSTALLATION.

OTHER APPROVED MAILBOX SUPPORTS MAY ALSO BE USED.

THE MAILBOX TO BE 8 INCHES TO 12 INCHES OUTSIDE THE EDGE OF SHOULDER OR 6 INCHES TO 12 INCHES FROM FACE OF CURB.

DETAILED	DRAWING	
REFERENCE STANDARD SPEC.	DWG.	NO.
SECTION		

2,500 copies of the document were produced at an estimated 50 cents per copy. A total of \$1,257 will be spent for printing and an estimated \$150 will be spent for distribution. Alternative accessible formats of this document will be provided upon request. Contact Jim Phillips at (406) 444-6331. The TTY number is (406) 444-7696 or (800) 335-7592.